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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,765	03/04/2004	Wei-En Chien	3232-8	4418
7590	10/28/2004		EXAMINER	
TROXELL LAW OFFICE PLLC SUITE 1404 5205 LEESBURG PIKE FALLS CHURCH, VA 22041				OWENS, DOUGLAS W
		ART UNIT	PAPER NUMBER	2811

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

14.D

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/791,765	CHIEN ET AL.	
	Examiner Douglas W Owens	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-3,7-9 and 12-14 is/are rejected.
- 7) Claim(s) 4-6,10,11,15-19 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 04 March 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 4 requires that the active layer comprise AlGaAs. The specification does not disclose this embodiment.

### ***Drawings***

2. Figures 1A – 1H should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claims 8 – 11 are objected to because of the following informalities: The claims recite the limitation, "...the metallic patterns..." in line 2 of each of the claims. There is no antecedent basis for this limitation. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 – 3, 7 – 9 and 13 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art in view of US Patent No. 5,008,718 to Fletcher et al.

Regarding claims 1 and 12, admitted prior art teaches a light-emitting semiconductor device (Figs. 1E and 1F, for example) comprising:

- a semiconductor substrate (10);
- an active layer (12) above the substrate, for inducing illumination of light;
- a conductive back contact (13) located below the substrate;
- a conductive front contact pattern (16, 17) including a bond pad and having a minimum dimension ranging from 5 – 25 micrometers, which touches the claimed range of 0.1 – 5 micrometers.

Admitted prior art does not teach that the bonding pad or pattern is metallic. Fletcher et al. teach a metallic bonding pad (25). It would have been obvious to one of ordinary skill in the art to use metal for the bonding pad and pattern, since it is desirable to provide a contact with high conductivity. The metal-semiconductor junction would have resulted in an Ohmic contact.

Regarding claim 2, admitted prior art does not teach a light-emitting semiconductor device, wherein the semiconductor substrate is GaAs. Fletcher et al. teach light-emitting device, wherein the substrate (20) is GaAs (Col. 2, lines 48 – 50).

Regarding claim 3, admitted prior art teaches a light-emitting device, wherein the active layer is AlGaInP (Page 2, lines 5 – 7).

Regarding claim 7, admitted prior art teaches a light emitting device, wherein the active layer and the front contact have a capping layer (14) therebetween.

Regarding claims 8 and 13, admitted prior art teaches a light-emitting device, wherein the patterns (17) of the front contact is configured to an interconnected mesh in electrical connection with the bonding pad. Admitted prior art does not teach a metal front contact. Fletcher et al. teach that the front contact is metal. It would have been obvious to one of ordinary skill in the art to use metal for the front contact, since it is desirable to provide a low resistance contact.

Regarding claims 9 and 14, admitted prior art teaches a light-emitting semiconductor device, wherein the patterns of the front contact (16) are disconnected. Admitted prior art does not teach a metal front contact. Fletcher et al. teach that the front contact is metal. It would have been obvious to one of ordinary skill in the art to use metal for the front contact, since it is desirable to provide a low resistance contact.

***Allowable Subject Matter***

6. Claims 4 – 6, 10, 11 and 15 – 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas W Owens whose telephone number is 571-272-1662. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Douglas W. Owens  
Patent Examiner